Environmental Impacts of Enhanced Oil Recovery Methods: Vital Aspect of Future Utilization in Iran

The application of Enhanced Oil Recovery (EOR) processes increases the economic value of existing fields through increased oil recovery and fieldlife extension. Average ultimate recovery from light and medium gravity oils by conventional methods is around 50-70% of the Original Oil in Place (OOIP), while for heavy oil deposits it's around 10%. When EOR chemicals are injected into deep wells for oil recovery, they may pose environmental problems. Most of oil/gas productions in Iran are primary recovery method. Declining oil discoveries and increasing demand will require the Iranian petroleum industry to consider enhanced oil recovery as a mainstream resource exploitation technology. On the other hand, in order to avoid environmental disaster, considering environmental impacts of EOR methods must be considered in planning and executing such methods. Major environmental impacts associated with EOR are: (1) contamination of surface water and groundwater, (2) excessive air emissions especially from thermal operations, (3) excessive erosion and sedimentation and (4) possible contamination of land. This article discusses environmental impacts of EOR methods for environmental pollution prevention in Iran.

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